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## PATENT ABSTRACTS OF JAPAN

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## (54) DRILL

## (57) Abstract:

**PURPOSE:** To improve the chamfer at the time of drilling of glass fiber reinforced material and to improve the working accuracy by making the included angle of a drill tip edge within the range of  $98 - 112^\circ$  and making the included angle of a shoulder edge within the range of  $50 - 60^\circ$ .

**CONSTITUTION:** The included angle ( $\alpha$ ) of a tip edge 1 having a flank 3 is decided within the range of  $98 - 112^\circ$ , and the included angle  $\beta$  of a shoulder edge 2 having a flank 4 is decided within the range of  $50 - 60^\circ$ . Due to this included angle  $\alpha$  being larger than that for aluminum material and smaller than that for steel material, the centripetal property enough for drilling of a glass fiber reinforced material, a proper cutting thrust and edge tip strength are obtained. Also due to the included angle  $\beta$  being larger than that for aluminum material and smaller than that for steel material, a sufficient edge tip strength is obtained, the variation of

the resistance in drawing out is reduced than for steel material as well, there is no generation of burrs and whiskers and the damage of the material to be cut is also eliminated.

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